


**GENERAL SERVICES ADMINISTRATION**  
**WASHINGTON, D. C. 20405**

PBS P 3440.5  
August 24, 1981

GSA ORDER

SUBJECT: Project Estimating Requirements

1. Purpose. This order issues and transmits a new HB, Project Estimating Requirements.
2. Cancellation. PBS P 3440.1A is canceled.
3. Background. This HB establishes the quality and level of estimating services to be provided during the design phase of a project. When estimating for a project that is contracted through the design architect-engineer (A-E) or is contracted for separately with a professional services cost consultant, this HB defines the deliverables expected and their schedule.
4. Forms. This order provides for the use of new GSA Form 3474, Project Cost Comparison Summary; GSA Form 3473, Project Cost Summary (Level 3); and GSA Form 3472, GSA Cost Data. An initial distribution of these forms will be made to Central Office and all regional offices. Additional supplies should be obtained in the usual manner.

  
JOHN F. GALUARDI  
Acting Commissioner  
Public Buildings Service

Distribution: A;F;G;P1;P2;RP(1Ø,2Ø);RPC1;3A1;3P1;3P2;3PC1.

Attachment

GSA DC-01105538

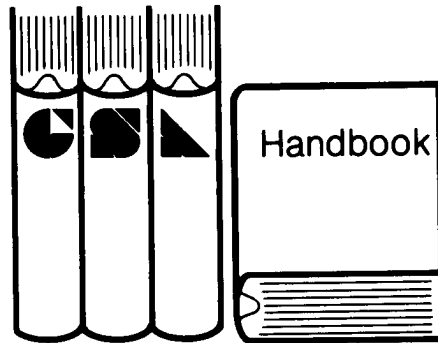
PBS P 3440.5

August 24, 1981

| <u>Office</u>  | <u>Copies</u> | <u>Office</u> | <u>Copies</u> |
|--|---------------|---------------|---------------|
| NCR  | 50            | Region 6:     | 50            |
| Region 1:  | 50            | Region 7:     | 50            |
| Region 2:  | 50            | Region 8:     | 50            |
| Region 3:  | 50            | Region 9:     | 50            |
| Region 4:  | 50            | Region 10:    | 50            |
| Region 5:  | 50            |               |               |
| <p>The above copies are for redistribution by the Director, Design and Construction Division, to architects and engineers engaged in future design and construction.</p> |               |               |               |
| Central Office   | PCM           | 150           |               |
| <p>The above copies are for redistribution by the Director, Cost Management Division, to professionals in other agencies that may request copies.</p>                    |               |               |               |

Figure 1. Supplemental distribution

PBS P 3440.5  
August 24, 1981



---

# Project Estimating Requirements

---

General Services Administration  
Washington, DC

August 24, 1981

PBS P 3440.5

GENERAL TABLE OF CONTENTS

|            |  |
|------------|--|
| CHAPTER 1. | INTRODUCTION   |
| CHAPTER 2. | CONSTRUCTION COST BASIS FOR A-E PROPOSAL AND NEGOTIATION |
| CHAPTER 3. | CONCEPT STAGE ESTIMATE SUBMISSION                        |
| CHAPTER 4. | TENTATIVE STAGE ESTIMATE SUBMISSION                      |
| CHAPTER 5. | FINAL WORKING DRAWING STAGE ESTIMATE SUBMISSION          |
| CHAPTER 6. | POST AWARD CONSTRUCTION COST ANALYSIS                    |



August 24, 1981

PBS P 3440.5

## TABLE OF CONTENTS

## CHAPTER 1. INTRODUCTION

| <u>Paragraph<br/>Titles</u>                        | <u>Paragraph<br/>Numbers</u> |
|--|------------------------------|
| Applicability . . . . .                            | 1                            |
| Scope . . . . .                                    | 2                            |
| Policies . . . . .                                 | 3                            |
| Performance standards for estimates . . . . .      | 4                            |
| Independent preparation . . . . .                  | 5                            |
| Administrative penalties . . . . .                 | 6                            |
| Requirements for phased projects . . . . .         | 7                            |
| Requirements for multistructure projects . . . . . | 8                            |
| Extent of estimating service . . . . .             | 9                            |

## Appendix 1-A. UNIFORMAT Code of Accounts

August 24, 1981

PBS P 3440.5

## CHAPTER 1. INTRODUCTION

1. Applicability. The instructions contained in this handbook shall be incorporated by reference in the contracts of architects-engineers (A-E's) who perform cost management services, either by separate contract or as part of an overall design. The provisions of this handbook are applicable to Public Buildings Service (PBS), Office of Design and Construction and Office of Contracts organizational elements. These guides and procedures shall be followed by all estimators, both A-E and GSA, in the discharge of their professional responsibilities.
2. Scope. This handbook provides instructions for the negotiation and administration of A-E contracts with regard to oversight of development of the A-E's construction estimates and cost control requirements. This handbook supersedes the technical requirements for project cost estimating and cost control incorporated in the HB, Procurement and Administration of Design and Construction, Volume 1, Architect-Engineer, Construction Manager, and Related Contracts (PBS P 3420.1).
3. Policies. In the design of new public buildings and in the repair and alteration of existing buildings, the A-E will ensure that the choice of design alternatives and the selection of construction materials and equipment will be evaluated from the standpoint of life cycle cost effectiveness, need for expenditure, and conformance with the National Energy Conservation Policy Act.
4. Performance standards for estimates. Each required estimate submittal must meet the following standards:
  - a. Balance. Among the various disciplines and buildings systems which make up the project and its design, there must be a proportional estimating effort submitted for each discipline, in approximate relationship to the total cost.
  - b. Completeness. For the estimate to be acceptable, it must include all elements of proposed project work, with all modifications, regardless of the stage of design.
  - c. Accuracy. The hallmark of a quality estimate is accuracy, and without this element, it loses its credibility. Lump sum amounts shall be held to an absolute minimum. The level of cost detail is to be appropriate to the design phase of the project. Generally, the level of detail will be indicated in this handbook by reference to the appropriate level of the UNIFORMAT code of accounts. (See appendix 1-A.)
5. Independent preparation. Each estimate submitted for a project must be prepared independent of the design team.
  - a. They shall be prepared under the direct supervision of a professional cost estimator whose full time or primary duty is that of estimating.

August 24, 1981

PBS P 3440.5

# Uniformat code of accounts

NOTE: This appendix shows UNIFORMAT levels 2 through 5. Level 6, which is not shown, would be a further breakdown of the level 5 item by types, sizes, material description, and individual quantities of labor and material.

For example, level 5, 08111 Cold Water Service, at level 6 detail would show a breakdown of:

- ... type of pipe, by diameter and lineal feet
- ... list of fittings
- ... type of valves, by size and number
- ... type of insulation, by diameter and lineal feet
- ... etc.

Appendix 1-A. UNIFORMAT Code of Accounts



**UNIFORMAT ELEMENT/ITEM**

| <b>01</b>   | <b>Foundations</b>                         | <b>02</b>   | <b>Substructure</b>                        |
|-------------|--|-------------|--|
| <b>011</b>  | <b>Standard Foundations</b>                | <b>021</b>  | <b>Slab on Grade</b>                       |
| <b>0011</b> | <b>Wall Foundations</b>                    | <b>0211</b> | <b>Standard Slab on Grade</b>              |
| 01111       | Wall Footings                              | 02111       | Slab Construction                          |
| 01112       | Foundation Walls & Pilasters               | 02112       | Base Courses                               |
| 01113       | Excavating & Backfilling                   | 02113       | Moisture Protection                        |
| <b>0112</b> | <b>Column Foundations &amp; Pile Caps</b>  | <b>0212</b> | <b>Structural Slab on Grade</b>            |
| 01121       | Column Footings                            | 02121       | Slab Construction                          |
| 01122       | Pile Caps                                  | 02122       | Grade Beams                                |
| 01123       | Column Piers & Base Plates                 | 02123       | Base Courses                               |
| 01124       | Excavating & Backfilling                   | 02124       | Moisture Protection                        |
| <b>012</b>  | <b>Special Foundation Conditions</b>       | <b>0213</b> | <b>Inclined Slab on Grade</b>              |
| <b>0121</b> | <b>Pile Foundations</b>                    | 02131       | Ramps                                      |
| 01211       | Mobilization/Demobilization                | 02132       | Inclined Floor Slabs                       |
| 01212       | Pile Tests                                 | 02133       | Stepped Slabs on Grade                     |
| 01213       | Piles                                      | 02134       | Steps                                      |
| <b>0122</b> | <b>Caissons</b>                            | <b>0214</b> | <b>Trenches, Pits, &amp; Bases</b>         |
| 01221       | Open Caissons                              | 02141       | Trenches & Depression in Slabs             |
| 01222       | Caisson Accessories                        | 02142       | Pits                                       |
| 01223       | Special Caissons                           | 02143       | Equipment & Machine Bases                  |
| <b>0123</b> | <b>Underpinning</b>                        | <b>0215</b> | <b>Foundation Drainage</b>                 |
| 01231       | Temporary Shoring to Structure             | 02151       | Perimeter Drains                           |
| 01232       | Excavating                                 | 02152       | Under Slab Drains                          |
| 01233       | Sheeting & Shoring to Excavation           | <b>022</b>  | <b>Basement Excavation</b>                 |
| 01234       | Backfilling                                | <b>0221</b> | <b>Excavation for Basements</b>            |
| 01235       | Concreting                                 | 02211       | Excavating                                 |
| 01236       | Formwork                                   | 02212       | Waste Material Disposal                    |
| 01237       | Steel Bar Reinforcing                      | <b>0222</b> | <b>Structure Backfill &amp; Compaction</b> |
| 01238       | Cutoff Projecting Footings                 | 02221       | Structure Backfill with Excavated Material |
| 01239       | Grouting & Dry Packing                     | 02222       | Borrow Backfill                            |
| <b>0124</b> | <b>Dewatering</b>                          | <b>0223</b> | <b>Shoring</b>                             |
| 01241       | Pumping                                    | 02231       | Sheeting and Shoring                       |
| 01242       | Well-Point                                 | 02232       | Tiebacks & Anchors                         |
| 01243       | Gravity Drainage                           | 02233       | Slurry Walls                               |
| <b>0125</b> | <b>Raft Foundations</b>                    | <b>023</b>  | <b>Basement Walls</b>                      |
| 01251       | Slab Construction                          | <b>0231</b> | <b>Basement Wall Construction</b>          |
| 01252       | Base Courses                               | 02311       | Basement Walls                             |
| 01253       | Moisture Protection                        | 02312       | Pilasters                                  |
| <b>0126</b> | <b>Other Special Foundation Conditions</b> | 02313       | Expansion & Construction Joints            |
| 01261       | Removal of Old Foundations                 | <b>0232</b> | <b>Moisture Protection</b>                 |
| 01262       | Rock Grouting                              | 02321       | Dampproofing                               |
| 01263       | Tunneling                                  | 02322       | Waterproofing                              |
| 01264       | Shoring Existing Buildings                 | <b>0233</b> | <b>Basement Wall Insulation</b>            |

August 24, 1981

PBS P 3440.5

## UNIFORMAT ELEMENT/ITEM

| 03    | Superstructure                               | 04    | Exterior Closure                      |
|-------|--|-------|---------------------------------------|
| 031   | Floor Construction                           | 041   | Exterior Walls                        |
| 0311  | <b>Suspended Basement Floor Construction</b> | 0411  | <b>Exterior Wall Construction</b>     |
| 03111 | Structural Frame                             | 04111 | Exterior Skin                         |
| 03112 | Interior Structural Walls                    | 04112 | Insulation & Vapor Barriers           |
| 03113 | Floor Slabs & Decks                          | 04113 | Interior Skin                         |
| 03114 | Inclined & Stepped Floors                    | 04114 | Parapets                              |
| 03115 | Expansion & Contraction Joints               | 04115 | Dampproof Courses                     |
| 0312  | <b>Upper Floors Construction</b>             | 04116 | Finish to Exposed Structure           |
| 03121 | Structural Frame                             | 04117 | Expansion Joints                      |
| 03122 | Interior Structural Walls                    | 04118 | Cornerstones                          |
| 03123 | Floor Slabs & Decks                          | 0412  | <b>Exterior Louvers &amp; Screens</b> |
| 03124 | Inclined & Stepped Floors                    | 04121 | Exterior Louvers                      |
| 03125 | Expansion & Contraction Joints               | 04122 | Decorative Grilles & Screens          |
| 0313  | <b>Balcony Construction</b>                  | 04123 | Exterior Vents                        |
| 03131 | Supported Balconies                          | 0413  | <b>Sun Control Devices (Exterior)</b> |
| 03132 | Cantilevered Balconies                       | 04131 | Projecting Sun Screens                |
| 0314  | <b>Ramps</b>                                 | 04132 | Awnings                               |
| 03141 | Pedestrian Ramps                             | 04133 | Exterior Shutters & Blinds            |
| 03142 | Vehicle Ramps                                | 0414  | <b>Balcony Walls &amp; Handrails</b>  |
| 0315  | <b>Special Floor Construction</b>            | 04141 | Balcony Walls                         |
| 03151 | Catwalks                                     | 04142 | Balcony Railings                      |
| 03152 | Space Frames                                 | 04143 | Balcony Handrails                     |
| 03153 | Cable-Supported Floor Systems                | 04144 | Balcony Dividing Walls                |
| 032   | <b>Roof Construction</b>                     | 0415  | <b>Exterior Soffits</b>               |
| 0321  | <b>Flat Roof Construction</b>                | 04151 | Building Soffits                      |
| 03211 | Structural Frame                             | 04152 | Balcony Soffits                       |
| 03212 | Interior Structural Walls                    | 04153 | Canopy Soffits                        |
| 03213 | Roof Slabs & Decks                           | 042   | <b>Exterior Doors &amp; Windows</b>   |
| 03214 | Expansion & Contraction Joints               | 0421  | <b>Windows</b>                        |
| 0322  | <b>Pitched Roof Construction</b>             | 04211 | Window Units & Hardware               |
| 03221 | Frame & Trusses                              | 04212 | Glazing                               |
| 03222 | Roof Decking & Sheathing                     | 04213 | Wall Opening Elements                 |
| 0323  | <b>Canopies</b>                              | 04214 | Protective Window Elements            |
| 03231 | Supported Canopies                           | 04215 | Exterior Window Painting & Staining   |
| 03232 | Cantilevered Canopies                        | 0422  | <b>Curtain Walls</b>                  |
| 0324  | <b>Special Roof Systems</b>                  | 04221 | Curtain Walls—Grid Systems            |
| 03241 | Concrete Shells & Domes                      | 04222 | Curtain Walls—Panel Systems           |
| 03242 | Hyperbolic Paraboloid Roofs                  | 0423  | <b>Exterior Doors</b>                 |
| 03243 | Space Frames                                 | 04231 | Glazed Doors & Entrances              |
| 03244 | Barrel Vault Roofs                           | 04232 | Solid Exterior Doors                  |
| 03245 | Saw Tooth Roofs                              | 04233 | Revolving Doors                       |
| 03246 | Cable-Supported Roofs                        | 04234 | Overhead Doors                        |
| 03247 | Air-Supported Structures                     | 04235 | Special Doors & Entrances             |
| 033   | <b>Stair Construction</b>                    | 0424  | <b>Storefronts</b>                    |
| 0331  | <b>Stair Structure</b>                       | 04241 | Framing                               |
| 03311 | Regular Stairs                               | 04242 | Panels & Bulkheads                    |
| 03312 | Curved Stairs                                | 04243 | Doors & Hardware                      |
| 03313 | Spiral Stairs                                | 04244 | Glazing                               |
| 03314 | Exterior Fire Escape Stairs                  | 04245 | Rolling Grilles & Folding Closures    |
| 03315 | Steps in Suspended Slabs                     | 04246 | Storefront Awnings                    |
|       |  | 04247 | Caulking                              |

**UNIFORMAT ELEMENT/ITEM**

|             |   |             |                                       |
|-------------|---|-------------|---------------------------------------|
| <b>05</b>   | <b>Roofing</b>                                | <b>0616</b> | <b>Interior Doors &amp; Frames</b>    |
|             | No Level 3                                    | 06161       | Interior Doors                        |
|             |   | 06162       | Interior Door Frames                  |
|             |   | 06163       | Interior Door Hardware                |
|             |   | 06164       | Interior Door Wall Opening Element    |
| <b>0501</b> | <b>Roof Coverings</b>                         | 06165       | Interior Door Sidelights & Transoms   |
| 05011       | Membrane Roofing                              | 06166       | Interior Door Painting & Staining     |
| 05012       | Shingles & Roofing Tile                       | 06167       | Hatches & Access Doors                |
| 05013       | Preformed Roofing                             |             |                                       |
| 05014       | Sheet Metal Roofing                           | <b>0617</b> | <b>Interior Storefronts</b>           |
| 05015       | Expansion Joints & Covers                     | 06171       | Framing                               |
| <b>0502</b> | <b>Traffic Toppings &amp; Paving Membrane</b> | 06172       | Panels & Bulkheads                    |
| 05021       | Traffic Toppings                              | 06173       | Doors & Hardware                      |
| 05022       | Waterproof Membranes Below Paving             | 06174       | Glazing                               |
| 05023       | Slatted Roof Decks & Walkways                 | 06175       | Rolling Grilles & Folding Closures    |
| <b>0503</b> | <b>Roof Insulation &amp; Fill</b>             |             |                                       |
| 05031       | Roof Vapor Barriers                           | <b>062</b>  | <b>Interior Finishes</b>              |
| 05032       | Roof & Deck Insulation                        |             |                                       |
| 05033       | Roof Fill                                     | <b>0621</b> | <b>Wall Finishes</b>                  |
| <b>0504</b> | <b>Flashings &amp; Trim</b>                   | 06211       | Wall Finishes to Inside Exterior Wall |
| 05041       | Flashings                                     | 06212       | Wall Finishes to Interior Walls       |
| 05042       | Gravel Stops                                  | 06213       | Column Finishes                       |
| 05043       | Fascia & Eaves                                |             |                                       |
| 05044       | Gutters & Downspouts                          | <b>0622</b> | <b>Flooring</b>                       |
| 05045       | Miscellaneous Roofing Specialties             | 06221       | Screens & Toppings                    |
| <b>0505</b> | <b>Roof Openings</b>                          | 06222       | Floor Finishes                        |
| 05051       | Glazed Roof Openings                          | 06223       | Bases, Curbs & Trim                   |
| 05052       | Hatches                                       | 06224       | Stair Finish                          |
| 05053       | Gravity Roof Ventilators                      | 06225       | Access Flooring (Pedestal Floors)     |
|             |   | <b>0623</b> | <b>Ceiling Finishes</b>               |
| <b>06</b>   | <b>Interior Construction</b>                  | 06231       | Ceiling Finishes Applied to Structure |
|             |   | 06232       | Suspended Ceilings                    |
| <b>061</b>  | <b>Partitions</b>                             | 06233       | Special Ceilings                      |
|             |   | 06234       | Stair Soffits                         |
| <b>0611</b> | <b>Fixed Partitions</b>                       | 06235       | Expansion Joint Covers                |
| 06111       | Solid Partitions                              |             |                                       |
| 06112       | Glazed Partitions                             | <b>063</b>  | <b>Specialties</b>                    |
| 06113       | Mesh Partitions                               |             |                                       |
| <b>0612</b> | <b>Demountable Partitions</b>                 | <b>0631</b> | <b>General Specialties</b>            |
| 06121       | Full Height Demountable Partitions            | 06311       | Chalk & Tackboards                    |
| 06122       | Bank Height Demountable Partitions            | 06312       | Identifying Devices                   |
|             |   | 06313       | Lockers                               |
| <b>0613</b> | <b>Retractable Partitions</b>                 | 06314       | Toilet & Bath Accessories             |
| 06131       | Accordion Folding Partitions                  | 06315       | Storage Shelving                      |
| 06132       | Folding Leaf Partitions                       | 06316       | Miscellaneous Metalwork               |
| 06133       | Coiling Partitions                            | 06317       | Miscellaneous Specialties             |
| <b>0614</b> | <b>Compartments &amp; Cubicles</b>            | <b>0632</b> | <b>Built-In Fittings</b>              |
| 06141       | Toilet Partitions                             | 06321       | Counters & Vanities                   |
| 06142       | Shower & Dressing Compartments                | 06322       | Kitchen Cabinets                      |
| 06143       | Hospital Cubicles                             | 06323       | Closets                               |
|             |   | 06324       | Miscellaneous Built-In Cabinetwork    |
| <b>0615</b> | <b>Interior Balustrades &amp; Screens</b>     |             |                                       |
| 06151       | Stair Balustrades                             |             |                                       |
| 06152       | Balustrades At Floor Openings                 |             |                                       |
| 06153       | Interior Grilles & Decorative Screens         |             |                                       |

August 24, 1981

PBS P 3440.5

**UNIFORMAT ELEMENT/ITEM****07 Conveying Systems**

No Level 3

**0701 Elevators**07011 Passenger Elevators  
07012 Freight Elevators**0702 Moving Stairs & Walks**07021 Escalators  
07022 Moving Walks**0703 Dumbwaiters**07031 Hand-Operated Dumbwaiters  
07032 Electric-Operated Dumbwaiters**0704 Pneumatic Tube Systems**07041 Pneumatic Message Tube Systems  
07042 Pneumatic Trash Tube Systems  
07043 Pneumatic Linen Tube Systems**0705 Other Conveying Systems**07051 Lifts  
07052 Hoists & Cranes  
07053 Conveyors  
07054 Chutes  
07055 Turntables**0706 General Construction Items**07061 Hoistway Beams  
07062 Hydraulic Elevator Shaft Drilling  
07063 Miscellaneous Metals  
07064 Lintels to Openings  
07065 Concrete Work  
07066 Masonry Work  
07067 Painting**08 Mechanical****081 Plumbing****0811 Domestic Water Supply System**08111 Cold Water Service  
08112 Hot Water Service  
08113 Domestic Water Supply Equipment**0812 Sanitary Waste & Vent System**08121 Waste Piping & Fittings  
08122 Vent Piping & Fittings  
08123 Floor Drains  
08124 Sanitary Waste Equipment  
08125 Thermal Pipe Insulation**0813 Rainwater Drainage System**08131 Pipe & Fittings  
08132 Roof Drains  
08133 Rainwater Drainage Equipment  
08134 Thermal Pipe Insulation**0814 Plumbing Fixtures**08141 Bath Tubs  
08142 Bidets  
08143 Kitchen Sinks  
08144 Laundry Sinks & Trays  
08145 Lavatories  
08146 Mop Sinks  
08147 Service Sinks  
08148 Showers  
08149 Urinals  
081410 Water Closets  
081411 Wash Fountains  
081412 Drinking Fountains & Coolers**082 HVAC****0821 Energy Supply**08211 Oil Supply System  
08212 Gas Supply System  
08213 Coal Supply System  
08214 Steam Supply System  
08215 Solar Energy Supply System  
08216 Wind Energy Supply System**0822 Heat Generating System**08221 Steam Boilers  
08222 Hot Water Boilers  
08223 Furnaces  
08224 Boiler Room Piping & Specialties  
08225 Auxiliary Equipment  
08226 Equipment Thermal Insulation**0823 Cooling Generating Systems**08231 Chilled Water Systems  
08232 Direct Expansion Systems**0824 Distribution Systems**08241 Air Distribution  
08242 Exhaust Ventilation Systems  
08243 Steam Distribution  
08244 Hot & Chilled Water Distribution  
08245 Change Over Distribution Systems  
08246 Glycol Heating Distribution System**0825 Terminal & Package Units**08251 Terminal Units  
08252 Packaged Units**0826 Controls & Instrumentation**08261 Air-Conditioning Systems  
08262 Energy Supply System  
08263 Heat-Generating System  
08264 Cooling-Generating System  
08265 Special Mechanical Systems  
08266 Instrument Panels  
08267 Instrument Air Compressor  
08268 Gas Purging System**0827 Systems Testing & Balancing**08271 Water Side Testing & Balancing  
08272 Air Side Testing & Balancing

## UNIFORMAT ELEMENT/ITEM

|             |  |             |  |
|-------------|--|-------------|--|
| <b>083</b>  | <b>Fire Protection</b>                             | <b>092</b>  | <b>Lighting and Power</b>                  |
| <b>0831</b> | <b>Water Supply (Fire Protection)</b>              | <b>0921</b> | <b>Branch Wiring</b>                       |
| 08311       | Water Connection                                   | 09211       | Wiring Circuits                            |
| 08312       | Pipe & Fittings                                    | 09212       | Branch Wiring Devices                      |
| 08313       | Valves   | <b>0922</b> | <b>Lighting Equipment</b>                  |
| <b>0832</b> | <b>Sprinklers</b>                                  | 09221       | Fluorescent Interior Lighting Fixtures     |
| 08321       | Wet Sprinkler System                               | 09222       | Incandescent Interior Lighting Fixtures    |
| 08322       | Dry Sprinkler System                               | 09223       | Other Lighting Fixtures & Equipment        |
| <b>0833</b> | <b>Standpipe Systems</b>                           | <b>093</b>  | <b>Special Electrical Systems</b>          |
| 08331       | Standpipe Equipment                                | <b>0931</b> | <b>Communications &amp; Alarm Systems</b>  |
| 08332       | Fire Hose Equipment                                | 09311       | Public Address Systems                     |
| 08333       | Pumping Equipment                                  | 09312       | Central Music Systems                      |
| <b>0834</b> | <b>Fire Extinguishers</b>                          | 09313       | Intercommunication Systems                 |
| 08341       | Hand-Held Fire Extinguishers                       | 09314       | Paging Systems                             |
| 08342       | Wheeled Cart Fire Extinguishers                    | 09315       | Utility Telephone Systems                  |
| 08343       | Fire Extinguisher Cabinets                         | 09316       | Nurses' Call System                        |
| <b>084</b>  | <b>Special Mechanical Systems</b>                  | 09317       | In-Out Registers                           |
| <b>0841</b> | <b>Special Plumbing Systems</b>                    | 09318       | Bell Systems                               |
| 08411       | Special Piping Systems                             | 09319       | Television Systems                         |
| 08412       | Acid Waste Systems                                 | 093110      | Clock & Program Systems                    |
| 08413       | Interceptors                                       | 093112      | Burglar Alarm Systems                      |
| 08414       | Pool Equipment                                     | 093113      | Other Systems                              |
| 08415       | Special Plumbing Fixtures                          | <b>0932</b> | <b>Grounding Systems</b>                   |
| <b>0842</b> | <b>Special Fire Protection Systems</b>             | 09321       | Lightning Protection                       |
| 08421       | Carbon Dioxide Extinguishing Equipment             | 09322       | Building Ground Systems                    |
| 08422       | Foam-Generating Equipment                          | 09323       | Special Grounding Systems                  |
| 08423       | Halon System Equipment                             | <b>0933</b> | <b>Emergency Light &amp; Power</b>         |
| 08424       | Hood & Duct Fire Protection                        | 09331       | Emergency Generator Systems                |
| <b>0843</b> | <b>Miscellaneous Special Systems &amp; Devices</b> | 09332       | Emergency Battery Systems                  |
| 08431       | Special Cooling Systems & Devices                  | 09333       | Other Emergency Light & Power Systems      |
| 08432       | Process Heating                                    | <b>0934</b> | <b>Electric Heating</b>                    |
| 08433       | Storage Cells & Devices                            | 09341       | Heating Equipment                          |
| 08434       | Dust & Fume Collectors                             | 09342       | Control Devices                            |
| 08435       | Deodorizing Equipment                              | 09343       | Branch Wiring                              |
| 08436       | Carbon Monoxide Equipment                          | 09344       | Other Heating Systems                      |
| 08437       | Sound Attenuating Equipment                        | <b>0935</b> | <b>Floor Raceway Systems</b>               |
| 08438       | Special Waste Treatment Devices                    | 09351       | Standard Underfloor Duct Systems           |
| <b>09</b>   | <b>Electrical</b>                                  | 09352       | Header (Feeder) Duct                       |
| <b>091</b>  | <b>Service &amp; Distribution</b>                  | 09353       | Industrial (square) Duct                   |
| <b>0911</b> | <b>High Tension Service &amp; Distribution</b>     | 09354       | Trench Duct                                |
| 09111       | High Tension System Monitoring                     | 09355       | Wiring Devices & Accessories               |
| 09112       | High Tension System Equipment                      | <b>0936</b> | <b>Other Special Systems &amp; Devices</b> |
| 09113       | High Tension System Distribution                   | 09361       | Special Lighting Systems                   |
| <b>0912</b> | <b>Low Tension Service &amp; Distribution</b>      | 09362       | Special Protective Systems & Devices       |
| 09121       | Low Tension System Monitoring                      | 09363       | Special Electronic Controls                |
| 09122       | Low Tension System Equipment                       | <b>0937</b> | <b>General Construction Items</b>          |
| 09123       | Low Tension System Distribution                    | 09371       | Cutting & Patching                         |
|             |  | 09372       | Trenching & Backfill                       |
|             |  | 09373       | Painting                                   |
|             |  | 09374       | Equipment Installation Items               |

August 24, 1981

PBS P 3440.5

**UNIFORMAT ELEMENT/ITEM**

|             |   |              |   |
|-------------|---|--------------|---|
| <b>11</b>   | <b>Equipment</b>                                  | <b>11110</b> | <b>Other Specialized Equipment</b>                    |
| <b>111</b>  | <b>Fixed &amp; Movable Equipment</b>              | 111101       | Darkroom Equipment                                    |
| <b>1111</b> | <b>Built-In Maintenance Equipment</b>             | 111102       | Educational Equipment                                 |
| 11111       | Window Washing Equipment                          | 111103       | Athletic Equipment                                    |
| 11112       | Vacuum Cleaning System                            | 111104       | Laboratory Equipment                                  |
| <b>1112</b> | <b>Checkroom Equipment</b>                        | 111105       | Laundry Equipment                                     |
| 11121       | Manual Checkroom Equipment                        | 111106       | Library Equipment                                     |
| 11122       | Automatic Storage & Retrieval Checkroom Equipment | 111107       | Medical Equipment                                     |
| <b>1113</b> | <b>Food Service Equipment</b>                     | 111108       | Mortuary Equipment                                    |
| 11131       | Refrigeration Cases                               | 111109       | Residential Equipment                                 |
| 11132       | Insulated Rooms                                   | 111110       | Auditorium & Stage Equipment                          |
| 11133       | Storage Units                                     | 111111       | Miscellaneous Specialized Equipment                   |
| 11134       | Cooking Equipment                                 |              |   |
| 11135       | Food Preparation Machines                         | <b>112</b>   | <b>Furnishings</b>                                    |
| 11136       | Food Serving Units                                | <b>1121</b>  | <b>Artwork</b>  |
| 11137       | Washing Units & Conveyors                         | 11211        | Bases & General Contract Work for Artwork & Sculpture |
| <b>1114</b> | <b>Vending Equipment</b>                          | <b>1122</b>  | <b>Window Treatment</b>                               |
| 11141       | Hot Drink Vending Unit                            | 11221        | Blinds  |
| 11142       | Cold Drink Vending Unit                           | 11222        | Interior Shutters                                     |
| 11143       | Hot Food Vending Unit                             | 11223        | Roll Shades   |
| 11144       | Cold Food Vending Unit                            | 11224        | Curtains & Drapes                                     |
| 11145       | Cigarette Vending Unit                            | <b>1123</b>  | <b>Seating</b>  |
| 11146       | Condiment Unit & Counter                          | 11231        | Auditorium Seating                                    |
| 11147       | Refuse Unit                                       | 11232        | Bleachers   |
| 11148       | Coin Changer                                      |              |   |
| 11149       | Microwave Oven                                    | <b>113</b>   | <b>Special Construction</b>                           |
| 111410      | Bases for Unit                                    | <b>1131</b>  | <b>Vaults</b>   |
| <b>1115</b> | <b>Waste Handling Equipment</b>                   | 11311        | Steel Vault Linings                                   |
| 11151       | Waste Compactors                                  | 11312        | Vault Doors & Frames                                  |
| 11152       | Incinerators                                      | 11313        | Vault Ventilation                                     |
| 11153       | Waste Storage Containers                          | 11314        | Prefabricated Vaults                                  |
| 11154       | Pulping Machines & Systems                        | <b>1132</b>  | <b>Interior Swimming Pools</b>                        |
| <b>1116</b> | <b>Loading Dock Equipment</b>                     | 11321        | Prefabricated Swimming Pools                          |
| 11161       | Dock Levellers                                    | 11322        | Swimming Pool Equipment                               |
| 11162       | Levelling Platforms                               | <b>1133</b>  | <b>Modular Prefabricated Assemblies</b>               |
| 11163       | Dock Bumpers                                      | <b>1134</b>  | <b>Special Purpose Rooms</b>                          |
| 11164       | Dock Seals & Shelters                             | 11341        | Audiometric Room                                      |
| <b>1117</b> | <b>Parking Equipment</b>                          | 11342        | Clean Room  |
| 11171       | Parking Bumpers & Guard Rails                     | 11343        | Hyperbaric Room                                       |
| 11172       | Parking Control Equipment                         | 11344        | Sauna   |
| <b>1118</b> | <b>Detention Equipment</b>                        | 11345        | Fallout Shelters (Interior)                           |
| 11181       | Cell & Corridor Construction                      | <b>1135</b>  | <b>Other Special Construction</b>                     |
| 11182       | Cell Accessories                                  | 11351        | Radiation Protection                                  |
| 11183       | Courtroom Security Devices                        | 11352        | Radio Frequency Shielding                             |
| 11184       | Detention Screens                                 |              |   |
| <b>1119</b> | <b>Postal Equipment</b>                           |              |   |
| 11191       | Mail Boxes  |              |   |
| 11192       | Post Office Equipment                             |              |   |

August 24, 1981

PBS P 3440.5

**UNIFORMAT ELEMENT/ITEM**

|             |                                     |             |   |
|-------------|-------------------------------------|-------------|---|
| <b>12</b>   | <b>Site Work</b>                    | <b>123</b>  | <b>Site Utilities</b>                               |
| 121         | Site Preparation                    | <b>1231</b> | <b>Water Supply &amp; Distribution</b>              |
| <b>1211</b> | <b>Clearing</b>                     | 12311       | Potable Water Systems                               |
| 12111       | Clearing & Grubbing                 | 12312       | Fire Protection Systems                             |
| 12112       | Tree Removal                        | 12313       | Process Water Systems                               |
| 12113       | Selective Thinning                  | 12314       | Irrigation Systems                                  |
| 12114       | Tree Pruning                        | <b>1232</b> | <b>Drainage &amp; Sewerage Systems</b>              |
| <b>1212</b> | <b>Demolition</b>                   | 12321       | Storm Drainage                                      |
| 12121       | Building Demolition                 | 12322       | Sanitary Sewer                                      |
| 12122       | Site Demolition                     | 12323       | Process & Acid Waste Systems                        |
| 12123       | Relocations                         | 12324       | Combined Drainage & Sewerage Systems                |
| <b>1213</b> | <b>Site Earthwork</b>               | <b>1233</b> | <b>Heating &amp; Cooling Systems</b>                |
| 12131       | Site Grading                        | 12331       | Heating System                                      |
| 12132       | Site Excavating                     | 12332       | Cooling Systems                                     |
| 12133       | Borrow Fill                         | <b>1234</b> | <b>Gas Distribution Systems</b>                     |
| 12134       | Soil Stabilization                  | 12341       | Natural Gas Systems                                 |
| 12135       | Soil Treatment                      | 12342       | Other Gas Systems                                   |
| 12136       | Site Dewatering                     | <b>1235</b> | <b>Electric Distribution &amp; Lighting Systems</b> |
| 12137       | Site Shoring                        | 12351       | Overhead Power Services                             |
| <b>122</b>  | <b>Site Improvements</b>            | 12352       | Underground Services                                |
| <b>1221</b> | <b>Parking Lots</b>                 | 12353       | Exterior Yard & Road Lighting                       |
| 12211       | Parking Lot Paving & Surfacing      | 12354       | Exterior Flood Lighting                             |
| 12212       | Curbs, Rails & Barriers             | 12355       | Exterior Lighting Controls                          |
| 12213       | Parking Booths & Equipment          | 12356       | Exterior Sign Lighting                              |
| <b>1222</b> | <b>Roads, Walks, &amp; Terraces</b> | <b>1236</b> | <b>Snow Melting Systems</b>                         |
| 12221       | Roads                               | 12361       | Piped Snow Melting Systems                          |
| 12222       | Walks                               | 12362       | Electrical Snow Melting Systems                     |
| 12223       | Terraces & Plazas                   | <b>1237</b> | <b>Service Tunnels</b>                              |
| <b>1223</b> | <b>Site Development</b>             | 12371       | Excavating & Backfilling                            |
| 12231       | Fences & Gates                      | 12372       | Constructed Service Tunnel                          |
| 12232       | Walls                               | 12373       | Prefabricated Service Tunnels                       |
| 12233       | Signs                               | 12374       | Moisture Protection                                 |
| 12234       | Site Furnishings                    | 12375       | Insulation  |
| 12235       | Fountains, Pools & Watercourses     | 12376       | Miscellaneous Items                                 |
| 12236       | Playing Field & Sports Facilities   | <b>124</b>  | <b>Off-Site Work</b>                                |
| 12237       | Flagpoles                           | <b>1241</b> | <b>Railroad Work</b>                                |
| 12238       | Miscellaneous Structures            | <b>1242</b> | <b>Marine Work</b>                                  |
| <b>1224</b> | <b>Landscaping</b>                  | <b>1243</b> | <b>Tunneling</b>                                    |
| 12241       | Fine Grading & Soil Preparation     | <b>1244</b> | <b>Other Off-Site Work</b>                          |
| 12242       | Top Soil & Planting Beds            |             |   |
| 12243       | Seeding & Sodding                   |             |   |
| 12244       | Planting                            |             |   |
| 12245       | Planters                            |             |   |
| 12246       | Special Landscape Feature           |             |   |

August 24, 1981

PBS P 3440.5

**UNIFORMAT ELEMENT/ITEM**

|             |  |
|-------------|--|
| <b>10</b>   | <b>General Conditions &amp; Profit</b>     |
| <b>1001</b> | <b>Mobilization &amp; Initial Expenses</b> |
| 10011       | Mobilization                               |
| 10012       | Permits & Fees                             |
| 10013       | Insurance & Bonds                          |
| <b>1002</b> | <b>Site Overhead</b>                       |
| 10021       | Site Supervisory & Emergency Staff         |
| 10022       | Labor On-Costs                             |
| 10023       | Sales & Use Taxes                          |
| 10024       | Construction Equipment                     |
| 10025       | Site Office Operating Costs                |
| 10026       | Temporary Facilities                       |
| 10027       | Site Protection Security                   |
| 10028       | Cleanup                                    |
| 10029       | Inspection & Testing                       |
| 100210      | Winter Conditions                          |
| 100211      | Miscellaneous Site Overheads               |
| <b>1003</b> | <b>Demobilization</b>                      |
| 10031       | Temporary Enclosures (Removal)             |
| 10032       | Temporary Buildings (Removal)              |
| 10033       | Temporary Services (Removal)               |
| 10034       | Equipment Demobilization                   |
| 10035       | Final Clean-up                             |
| 10036       | Repairing Sidewalks & Streets              |
| 10037       | Punch List & Warranties                    |
| 10038       | Maintenance Manuals & As-built Drawings    |
| 10039       | Staff Relocation Costs                     |
| 100310      | Opening Ceremonies                         |
| <b>1004</b> | <b>Main Office Expense &amp; Profit</b>    |
| 10041       | Main Office Expense                        |
| 10042       | Profit                                     |



CHAPTER 2. CONSTRUCTION  
COST BASIS FOR A-E PRO-  
POSAL & NEGOTIATION

August 24, 1981

PBS P 3440.5

## TABLE OF CONTENTS

## CHAPTER 2. CONSTRUCTION COST BASIS FOR A-E PROPOSAL AND NEGOTIATION

| <u>Paragraph<br/>Titles</u>  | <u>Paragraph<br/>Numbers</u> |
|--|------------------------------|
| Contract documents and program requirements provided A-E . . . . . | 1                            |
| Estimate basis . . . . .   | 2                            |
| Affirmation of A-E responsibility. . . . .                         | 3                            |
| A-E cost management capability . . . . .                           | 4                            |
| Monitoring design and cost targets . . . . .                       | 5                            |
| Adjusting for escalation . . . . .                                 | 6                            |

Figure 2-2. Sample budget issuance

August 24, 1981

PBS P 3440.5

## CHAPTER 2. CONSTRUCTION COST ESTIMATE BASIS FOR A-E PROPOSAL &amp; NEGOTIATION

1. Contract documents and program requirements provided A-E. Following notification of the selected A-E, contract documents and program requirements will be sent to the A-E as provided for in the GSA HB, Instructions to Contract Architects (PBS P 3410.1C). This material is for the use of the A-E in preparing his proposal and for negotiation preparation.

2. Estimate basis.

a. Estimate format. The A-E will base the fee for cost estimating and control services on using the GSA UNIFORMAT estimating code of accounts. (See appendix 1-A.) This is a format to facilitate tracking building cost items throughout the life cycle of the building design and construction. All cost data on the UNIFORMAT can be summarized into the same 12-element summary for cost control purposes. The GSA construction budget cost estimate which is provided the A-E prior to negotiation will be UNIFORMAT level 2 and issued on GSA Form 3474, Project Cost Comparison Summary. Figure 2-2 illustrates an example of the content of the form when issued.

b. Space requirements. The A-E will be provided GSA Form 261, Space Planning Directive. This document shall list in detail each type and amount of occupiable space required and a summary of all required occupiable space. The A-E will also be provided with the GSA estimated building gross area used as a budget basis to meet the occupiable area requirements. The estimated gross area provided by GSA is not considered a target gross area, but an upper limit. Where a predesign program exists, it will be provided as a basis for project scope.

c. Project description. The A-E will be provided with the project description including available site data, technical standards, and criteria. An informal conference will usually be held immediately before the negotiation so that the A-E will have a thorough understanding of the project scope and requirements, including technical standards, criteria aesthetics and policies, and energy conservation, environmental and ecological considerations as applied to the particular project. On certain alteration projects, A-E's will be invited to meet with PBS personnel at the project site to refine program requirements prior to making a proposal. It is of utmost importance that the A-E has a thorough understanding of the project scope and cost requirements.

d. Estimate data basis. The cost estimate provided by GSA at this stage will be based on an estimated construction cost of a construction contract to be awarded at a date in the future (ECCA) in accordance with the proposed design and construction schedule determined at the date of the A-E contract negotiation. When affirmed by the A-E, this figure will be used to establish the A-E's fixed limit of construction cost. Provision will be made to adjust this limit only if the contracting officer agrees to extend the schedule through no fault of the A-E or the A-E receives direction to modify project scope and such modification is determined by the contracting officer to have an impact on the scheduled design time.

**Project Cost Comparison Summary**

|  |                      |                              |                                       |                                   |                          |
|--|----------------------|------------------------------|---------------------------------------|-----------------------------------|--------------------------|
| Project: FOB                             |                      | Project No:                  |                                       | Sheet No:                         |                          |
| Location: WASHINGTON, DC                 |                      | Estimator:                   |                                       |                                   |                          |
| Construction Cost (ECCA)<br>(Level 2)    | Budget<br>Date: 4/81 | Concept<br>Estimate<br>Date: | Tentative<br>Design Estimate<br>Date: | Pre-bid Cost<br>Estimate<br>Date: | Bid<br>Analysis<br>Date: |
| 01 FOUNDATIONS                           | 1,050,000            |                              |                                       |                                   |                          |
| 02 SUBSTRUCTURE                          | 428,000              |                              |                                       |                                   |                          |
| 03 SUPERSTRUCTURE                        | 2,838,000            |                              |                                       |                                   |                          |
| 04 EXTERIOR CLOSURE                      | 1,985,000            |                              |                                       |                                   |                          |
| 05 ROOFING                               | 110,000              |                              |                                       |                                   |                          |
| 06 INTERIOR CONSTRUCTION                 | 3,583,000            |                              |                                       |                                   |                          |
| 07 CONVEYING SYSTEMS                     | 653,000              |                              |                                       |                                   |                          |
| 08 MECHANICAL                            | 3,478,000            |                              |                                       |                                   |                          |
| 09 ELECTRICAL                            | 1,855,000            |                              |                                       |                                   |                          |
| 10 GENERAL CONDITIONS AND PROFIT         | 1,600,000            |                              |                                       |                                   |                          |
| 11 EQUIPMENT                             | 638,000              |                              |                                       |                                   |                          |
| 12 SITEWORK                              | 350,000              |                              |                                       |                                   |                          |
| SCHEDULE<br>CONTRACT DATE                | 1/83                 |                              |                                       |                                   |                          |
| DESIGN CONTINGENCY                       | 1,490,000            |                              |                                       | 0                                 | 0                        |
| ESCALATION TO SCHEDULED<br>CONTRACT DATE | 3,610,000            |                              |                                       |                                   |                          |
| Progressive Cost                         |                      | \$                           | \$                                    | \$                                | \$                       |
| Target Cost                              | \$ 23,668,000        | \$                           | \$                                    | \$                                | \$                       |
| Difference from Target Cost              |                      | \$                           | \$                                    | \$                                | \$                       |
| Cost per SF                              | 94.67 \$/SF          | \$/SF                        | \$/SF                                 | \$/SF                             | \$/SF                    |
| Gross Floor Area                         | 250,000 SF           | SF                           | SF                                    | SF                                | SF                       |
| Remarks:                                 |                      |                              |                                       |                                   |                          |

GSA FORM 3474 (2-81)

Figure 2-2. Sample budget issuance

August 24, 1981

PBS P 3440.5

3. Affirmation of A-E responsibility. The A-E will be requested to confirm that the design of the project will be within the fixed limit of construction cost (ECCA), while providing the occupiable space without exceeding the maximum authorized gross area. The A-E's attention will be drawn to GSA's construction cost limitation revision clause. (See GSA Form 1495.) This provides that if the Government estimated construction contract award amount, based on the design and construction schedule at the time of negotiation, adjusted by Construction Cost Indices (if applicable), is exceeded by 5 percent in the lowest acceptable bid, the A-E shall be required, at the A-E's expense, to revise the drawings and specifications to reduce the cost to an amount within this specified limit. (See GSA Form 1495 for the method to be used in adjusting the Government estimate, if applicable.)

4. A-E cost management capability. The A-E will be required to submit cost estimates at each stage of the design submissions: concepts, tentatives and final working drawings. These estimates are to be prepared by qualified professional estimators. The estimating and cost control may be performed by consultants with proven experience and whose primary function is cost estimating and cost management of building construction projects. Preference in evaluating qualifications will be given to certified cost engineers for estimating, and certified value specialists for cost control work.

5. Monitoring design and cost targets. At each design stage, the A-E will be required to compute the occupiable and gross areas, and ascertain that the space requirements, listed in GSA Form 261, heretofore mentioned, are being satisfied. A cost estimate, at each stage of design, must be prepared. This estimated construction cost award amount must be closely monitored against the GSA budget estimate as affirmed under ch. 2-3.

6. Adjusting for escalation. The A-E shall be responsible for forecasting escalation between the anticipated date of contract award and the current date of design. The A-E shall control the cost of the project design in such a manner that, when the ECCA budget is reduced by the forecasted amount of escalation, the residual budget amount represents the current value of the project design. Thus, as design draws nearer to 100 percent completion, the forecasted escalation will approach zero and the final estimate of the project design will match the ECCA budget.

CHAPTER 3. CONCEPT  
STAGE ESTIMATE  
SUBMISSION

August 24, 1981

PBS P 3440.5

## TABLE OF CONTENTS

## CHAPTER 3. CONCEPT STAGE ESTIMATE SUBMISSION

| <u>Paragraph<br/>Titles</u>        | <u>Paragraph<br/>Numbers</u> |
|------------------------------------|------------------------------|
| Scope . . . . .                    | 1                            |
| Space analysis . . . . .           | 2                            |
| Design analysis . . . . .          | 3                            |
| Site analysis . . . . .            | 4                            |
| Concept cost estimates . . . . .   | 5                            |
| Comparison to GSA budget . . . . . | 6                            |
| Cost saving ideas . . . . .        | 7                            |
| Submittal package . . . . .        | 8                            |

Figure 3-5. Sample level 3 summary

August 24, 1981

PBS P 3440.5

### CHAPTER 3. CONCEPT STAGE ESTIMATE SUBMISSION

1. Scope. This chapter describes the design work to be provided the A-E's estimator as well as the estimating products to be prepared and analyzed.
2. Space analysis. The A-E will provide the estimator with a space analysis listing the program occupiable areas provided for in the concept design, the support areas, and the gross areas. The A-E should strive for high space efficiency which may result in a building with less gross area than the estimated maximum gross area provided by GSA as the basis for the budget on GSA Form 3474.
3. Design analysis. The A-E will provide the estimator with sketches of all floor plans, elevations, sections, and perspective views in sufficient detail to provide a realistic parametric cost analysis. In addition, the A-E will provide:
  - a. A statement on the conceptual approach for each major building system including an itemized listing of the anticipated type and sizing of all major equipment and block loads for structural, mechanical and electrical systems;
  - b. Quality levels of major materials and systems to be used including special code requirements for fire protection, electrical, plumbing, and structural.
4. Site analysis. The A-E shall obtain city-county maps and U.S. Geological Survey maps to aid in site analysis. Siting and orientation of the building shall be indicated, and the prepared site plan shown must be complete enough to develop foundation assumptions and site work assumptions.
5. Concept cost estimates. Two estimates based on the A-E's project concept submittal and the above analysis shall be prepared and submitted. The first estimate shall be based on appropriate design/engineering parameters with associated element quantities (i.e.: air conditioning tonnage, foundation whole bay loads, exterior wall square footage, electrical load, sprinkler heads, fire alarm stations, etc.). The second estimate shall be based on estimated gross square foot cost.
  - a. Level of detail. The minimum level of estimating detail required for both estimates is UNIFORMAT level 3. Additional detail may be provided as back up to support one or more of the cost elements such as a listing of: "0684-Special Mechanical Systems."
  - b. Format. Back up estimating data may be in any format. Additional levels of estimating detail below level 3 need not be identified by UNIFORMAT account numbers as long as the items of work are properly grouped by level 3 account numbers. Estimates shall be summarized and submitted on GSA Form 3473, Project Cost Summary (Level 3). (See fig. 3-5.)



**Project Cost Summary (Level 3)**

| Project:                          |  | Date:        |                  | Sheet No:                |   |                       |      |                      |
|-----------------------------------|--|--------------|------------------|--------------------------|---|-----------------------|------|----------------------|
| Uniformat Element (Levels 2 & 3)  |  | Amount<br>\$ | Total Cost<br>\$ | Rate \$/SF<br>Floor Area | % | Element<br>Quantities | Unit | Element<br>Unit Rate |
| 01 FOUNDATIONS                    |  |              |                  |                          |   |                       |      |                      |
| 011 Standard foundations          |  |              |                  |                          |   |                       |      |                      |
| 012 Special foundation conditions |  |              |                  |                          |   |                       |      |                      |
| 02 SUBSTRUCTURE                   |  |              |                  |                          |   |                       |      |                      |
| 021 Slab on grade                 |  |              |                  |                          |   |                       |      |                      |
| 022 Basement excavation           |  |              |                  |                          |   |                       |      |                      |
| 023 Basement walls                |  |              |                  |                          |   |                       |      |                      |
| 03 SUPERSTRUCTURE                 |  |              |                  |                          |   |                       |      |                      |
| 031 Floor construction            |  |              |                  |                          |   |                       |      |                      |
| 032 Roof construction             |  |              |                  |                          |   |                       |      |                      |
| 033 Stair construction            |  |              |                  |                          |   |                       |      |                      |
| 04 EXTERIOR CLOSURE               |  |              |                  |                          |   |                       |      |                      |
| 041 Exterior walls                |  |              |                  |                          |   |                       |      |                      |
| 042 Exterior doors and windows    |  |              |                  |                          |   |                       |      |                      |
| 05 ROOFING                        |  |              |                  |                          |   |                       |      |                      |
| 06 INTERIOR CONSTRUCTION          |  |              |                  |                          |   |                       |      |                      |
| 061 Partitions                    |  |              |                  |                          |   |                       |      |                      |
| 062 Interior finishes             |  |              |                  |                          |   |                       |      |                      |
| 063 Specialties                   |  |              |                  |                          |   |                       |      |                      |
| 07 CONVEYING SYSTEMS              |  |              |                  |                          |   |                       |      |                      |
| 08 MECHANICAL                     |  |              |                  |                          |   |                       |      |                      |
| 081 Plumbing                      |  |              |                  |                          |   |                       |      |                      |
| 082 HVAC                          |  |              |                  |                          |   |                       |      |                      |
| 083 Fire protection               |  |              |                  |                          |   |                       |      |                      |
| 084 Special mechanical systems    |  |              |                  |                          |   |                       |      |                      |

GSA FORM 3473 (2-81)

Figure 3-5. Sample level 3 summary  
(Part 1 of 2)

August 24, 1981

PBS P 3440.5

**Project Cost Summary (Level 3)**

| Project:                               |              | Date:            |                          | Sheet No: |                       |      |                      |
|--|--------------|------------------|--------------------------|-----------|-----------------------|------|----------------------|
| Uniformat Element (Levels 2 & 3)       | Amount<br>\$ | Total Cost<br>\$ | Rate \$/SF<br>Floor Area | %         | Element<br>Quantities | Unit | Element<br>Unit Rate |
| <b>09 ELECTRICAL</b>                   |              |                  |                          |           |                       |      |                      |
| 091 Service & distribution             |              |                  |                          |           |                       |      |                      |
| 092 Lighting & power                   |              |                  |                          |           |                       |      |                      |
| 093 Special electrical systems         |              |                  |                          |           |                       |      |                      |
| <b>10 GEN. CONDITIONS &amp; PROFIT</b> |              |                  |                          |           |                       |      |                      |
| <b>11 EQUIPMENT</b>                    |              |                  |                          |           |                       |      |                      |
| 111 Fixed & movable equipment          |              |                  |                          |           |                       |      |                      |
| 112 Furnishings                        |              |                  |                          |           |                       |      |                      |
| 113 Special construction               |              |                  |                          |           |                       |      |                      |
| <b>12 SITE WORK</b>                    |              |                  |                          |           |                       |      |                      |
| 121 Site preparation                   |              |                  |                          |           |                       |      |                      |
| 122 Site improvements                  |              |                  |                          |           |                       |      |                      |
| 123 Site utilities                     |              |                  |                          |           |                       |      |                      |
| 124 Off-site work                      |              |                  |                          |           |                       |      |                      |
| <b>SUBTOTAL</b>                        |              |                  |                          | 100%      |                       |      |                      |
| <b>DESIGN CONTINGENCY</b>              | %            |                  |                          |           |                       |      |                      |
| <b>ESCALATION FROM TO</b>              | %            |                  |                          |           |                       |      |                      |
| <b>TOTAL ECCA</b>                      |              |                  |                          |           |                       |      |                      |

REMARKS:

GSA FORM 3473 BACK (2-81)

Figure 3-5. Sample level 3 summary  
(Part 2 of 2)

PBS P 3440.5

August 24, 1981

c. Pricing. All unit costs shall be current as of the date of estimating with an allowance for construction contract performance time and shall contain all appropriate mark-ups at the subcontract level. Escalation from the date of the estimate to the scheduled contract award date shall be included as an item at the end of the estimate. Similarly, a design contingency may be shown at the concept stage.

6. Comparison to GSA budget. The GSA Form 3474 provided during A-E contract negotiations (see ch. 2) shall be used to summarize the concept estimate and compare it to the GSA budget. It shall be compared by total cost and by each element at UNIFORMAT level 2. If the concept estimate exceeds the budget estimate, the A-E shall be required to propose cost saving ideas to bring the project within budget.

7. Cost saving ideas. The estimator shall make a list of proposed cost saving ideas with an order of magnitude estimate of savings for each item.

a. The A-E shall comment on the list of cost savings and recommend acceptance or rejection with his rationale for such recommendations.

b. If the A-E recommends disapproval of the ideas of the estimator, the A-E is obligated to suggest alternate savings sufficient to provide a project within budget.

8. Submittal package. A special cost estimating package shall be bound together and submitted to the Government for the review by GSA estimating personnel. The following items shall be included in the package in the order listed below:

- a. Cover sheet with project description.
- b. GSA Form 3474;
- c. GSA Form 3473;
- d. Back-up cost estimates;
- e. Cost saving recommendations;
- f. Space analysis data;
- g. Design analysis data; and
- h. Site analysis data.

CHAPTER 4. TENTATIVE  
STAGE ESTIMATE  
SUBMISSION

August 24, 1981

PBS P 3440.5

TABLE OF CONTENTS

CHAPTER 4. TENTATIVE STAGE ESTIMATE SUBMISSION

| <u>Paragraph<br/>Titles</u>        | <u>Paragraph<br/>Numbers</u> |
|------------------------------------|------------------------------|
| Scope . . . . .                    | 1                            |
| Design data . . . . .              | 2                            |
| Tentative cost estimates. . . . .  | 3                            |
| Market survey . . . . .            | 4                            |
| Comparison to GSA budget . . . . . | 5                            |
| Cost saving review . . . . .       | 6                            |
| Submittal package . . . . .        | 7                            |

August 24, 1981

PBS P 3440.5

#### CHAPTER 4. TENTATIVE STAGE ESTIMATE SUBMISSION

1. Scope. This chapter describes the design work to be provided the A-E's estimator as well as the estimating products to be prepared and analyzed.

2. Design data.

a. The A-E will provide the estimator with specific statements regarding whether or not any changes to the following data submitted during concept estimating have occurred:

- (1) Space analysis;
- (2) Design analysis; and
- (3) Site data.

b. The A-E will provide the estimator with all tentative stage design work including:

- (1) Drawings;
- (2) Outline specifications;
- (3) Preliminary computations;
- (4) Recommended project directive; and

(5) Intended quantities for items of work not yet shown in the tentative submittal should this occur.

3. Tentative cost estimates. Two estimates based on the A-E's project tentative stage submittal and the above information shall be prepared and submitted. The first estimate shall be based on appropriate design/engineering parameters with associated element quantities. The second estimate shall be based on unit pricing of labor and material based on performance of a quantity survey to the level of detail stipulated.

a. Level of detail. For the first estimate, the estimator shall recalculate parameter quantities at UNIFORMAT level 3. For the second estimate, the estimator shall perform a quantity survey at UNIFORMAT level 5.

b. Format. Estimates shall be summarized and submitted on GSA Form 3473. Back-up estimating data and quantity survey information may be in any format and need not be identified by UNIFORMAT account numbers as long as the items of work are properly grouped by level 3 account numbers.

c. Pricing. All unit costs shall be current as of the date of estimating. Escalation from the date of the estimate to the scheduled contract award date shall be included as an item at the end of the estimate. Design contingency may be included at the end of the estimate but should be less than that included at the concept stage since the design is more complete.

August 24, 1981

PBS P 3440.5

4. Market survey. For every project anticipated to have a construction cost of approximately \$5 million or more, a market survey shall be conducted. The survey should be conducted no later than 3 months prior to design completion to enable the A-E sufficient time to revise design, incorporate alternatives, change the construction schedule or whatever else might be necessary as a result of the survey.

a. Determine by site visit to the local market area:

- (1) The availability of major materials to be in the project;
- (2) The capability of local fabricators, precast yards, concrete plants, etc;
- (3) The availability of labor crafts necessary for the project;
- (4) The capacity of local contractors during the anticipated bidding/construction period;
- (5) Special conditions that might influence bidding; and
- (6) Local escalation experience.

b. Submit a written report to the contracting officer within 2 weeks of the market survey. As a minimum the report shall include:

(1) Data regarding contacts:

- (a) Who was contacted;
- (b) Where they are located (include distance from site).
- (c) When they were contacted;
- (d) Why they were contacted; and
- (e) What information was obtained.

(2) A summary assessment with specific recommendations when appropriate.

5. Comparison to GSA budget. Similar to that specified in ch. 3 for the concept estimate, GSA Form 3474 shall be used to summarize the tentative estimate and compare it to the GSA budget. If the tentative estimate exceeds the budget estimate, the A-E shall be required to propose additional cost saving ideas to bring the project within budget.

6. Cost saving review. While performing the required estimating services, the estimator shall perform a review of the design work for potential cost savings.

August 24, 1981

PBS P 3440.5

a. The first part of the review shall be a report on what cost saving ideas were actually incorporated in the design as the result of recommendations made for the concept submittal, if any.

b. The second part of the review shall concentrate on suggesting additional cost saving ideas in at least an amount to bring the project 5 percent below budget if all ideas are approved. A specific portion of this effort shall be a design review of the structural, mechanical and electrical systems and computations to ensure that over design and/or higher cost is not caused by:

- (1) Providing excessive spare capacity;
- (2) Providing unnecessary redundant systems/components;
- (3) Designing for unnecessary expansion;
- (4) Splitting systems/loads;
- (5) Not designing for a degree of risk in lieu of peak conditions;
- (6) Adding unwarranted factors of safety in sizing equipment systems;
- (7) Rounding off calculations only in the upward direction; and
- (8) Selecting equipment/material sizes from manufacturer's catalogues only in the next size higher than that calculated.

c. Similar to the cost saving ideas provided under ch. 3 for the concept submittal, the A-E shall comment to GSA on all these cost saving ideas.

7. Submittal package. A special cost estimating package shall be bound together and submitted to the Government for review by GSA estimating personnel. The following items shall be included in the package in the order listed below:

- a. Cover sheet with project description.
- b. GSA Form 3474;
- c. GSA Form 3473;
- d. Back-up cost estimate; and
- e. Cost savings review report.



CHAPTER 5. FINAL  
WORKING DRAWING STAGE  
ESTIMATE SUBMISSION

August 24, 1981

PBS P 3440.5

## TABLE OF CONTENTS

## CHAPTER 5. FINAL WORKING DRAWING STAGE ESTIMATE SUBMISSION

| <u>Paragraph<br/>Titles</u>                     | <u>Paragraph<br/>Numbers</u> |
|---|------------------------------|
| Scope . . . . .                                 | 1                            |
| Design data . . . . .                           | 2                            |
| Final cost estimate . . . . .                   | 3                            |
| Comparison to GSA budget . . . . .              | 4                            |
| Cost saving checklist . . . . .                 | 5                            |
| Amendment and bid alternate estimates . . . . . | 6                            |
| Submittal package . . . . .                     | 7                            |

Appendix 5-A. UCI system

August 24, 1981

PBS P 3440.5

## CHAPTER 5. FINAL WORKING DRAWING STAGE ESTIMATE SUBMISSION

1. Scope. This chapter describes the estimating process and products to be prepared as a final submission preparatory to placing the construction project on the market for receipt of bids.

2. Design data.

a. The A-E will provide the estimator with specific statements regarding whether or not any changes have occurred since the tentative submittal regarding:

- (1) Mechanical, electrical or structural system concepts and loads; and
- (2) Space analysis.

b. The A-E will provide the estimator with final design work including 100 percent complete contract drawings and specifications.

✓ 3. Final cost estimate. The final estimate shall be prepared to reflect anticipated construction costs in accordance with the design and construction schedule established for the contract, including any amendments.

a. Level of detail. The estimate shall consist of a detailed quantity survey of labor and material at UNIFORMAT level 6.

b. Format. Two formats of the final estimate shall be provided.

(1) The first format shall be summarized and submitted on GSA Form 3473 with back-up data grouped by UNIFORMAT level 3 account as specified previously.

(2) The second format shall be summarized and submitted by construction trade in accordance with the Uniform Construction Index (UCI) or Construction Specifications Institute (CSI) MASTERFORMAT 16 section system. (See appendix 5-A.) This format shall be for the purpose of relating to the construction contractors bidding procedure for progress and payment schedules.

4. Comparison to GSA budget. Similar to that specified in ch. 4 for the tentative estimate, GSA Form 3474 shall be used to summarize the final estimate and compare it to the GSA budget. If the final estimate exceeds the budget estimate, the A-E shall be required to propose additional cost saving reductions or bid alternates sufficient to ensure receipt of bids within budget on the scheduled date.

✓ 5. Cost saving checklist. While performing the required detailed quantity survey and cost estimating service, the estimator shall maintain a checklist of all potential cost saving ideas that are discovered along with the drawing sheet number or specification page number where located. In addition, a summary of cost saving changes implemented from the tentative stage review shall be provided. All this shall be reviewed by the A-E and forwarded to the Government with an indicated course of action or recommendation.

PBS P 3440.5

August 24, 1981

- ✓ 6. Amendment and bid alternate estimates. Each contract amendment and/or bid alternate included in the contract documents for bidding purposes shall be estimated separately. The estimate shall be a level 6 labor and material quantity survey of work added to and/or deleted from the basic contract by the amendment or bid item. If there is no cost impact caused by an amendment or bid alternate, an affirmative statement to that effect is required.
- ✓ 7. Submittal package. A special cost estimating package shall be bound together and submitted to the Government for review by GSA estimating personnel. The following items shall be included in the package in the order listed below.
  - a. Cover sheet with project description;
  - b. GSA Form 3474;
  - c. GSA Form 3473;
  - d. Back-up cost estimate;
  - e. Bid alternate estimates;
  - f. Cost saving checklist; and
  - g. UCI format estimate.

August 24, 1981

PBS P 3440.5

| Design    |                | Construction<br>UCI        | <div> <div>General Requirements</div> <div>Sitework</div> <div>Concrete</div> <div>Masonry</div> <div>Metals</div> <div>Wood - Plastic</div> <div>Thermal And Moisture Protect</div> <div>Doors And Windows</div> <div>Finishes</div> <div>Specialties</div> <div>Equipment</div> <div>Furnishings</div> <div>Special Construction</div> <div>Conveying Systems</div> <div>Mechanical</div> <div>Electrical</div> </div> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-----------|----------------|----------------------------|--|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Uniformat | Level 2        | Level 3                    | 01   | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 01        | Foundations    | 011 Standard Foundations   |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 012 Spec Foundation Cond   |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 02        | Substructure   | 021 Slab On Grade          |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 022 Basement Excavation    |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 023 Basement Walls         |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 03        | Superstructure | 031 Floor Construction     |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 032 Roof Construction      |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 033 Stair Construction     |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 04        | Ext. Closure   | 041 Exterior Walls         |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 042 Ext. Doors & Windows   |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 05        | Roofing        |                            |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 06        | Int. Const.    | 061 Partitions             |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 062 Interior Finishes      |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 063 Specialties            |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 07        | Conveying Sys. |                            |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 08        | Mechanical     | 081 Plumbing               |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 082 H.V.A.C.               |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 083 Fire Protection        |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 084 Spec. Mechanical Syst. |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 09        | Electrical     | 091 Service & Distribut.   |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 092 Lighting And Power     |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 093 Spec. Electrical Syst. |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 10        | Gen Cond. OH&P |                            |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 11        | Equipment      | 111 Fixed & Movable Equip. |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 112 Furnishings            |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 113 Special Construction   |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 12        | Sitework       | 121 Site Preparation       |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 122 Site Improvements      |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 123 Site Utilities         |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |                | 124 Off-Site Work          |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

Note: CSI Masterformat has some 16 Divisions

## Appendix 5-A. UCI system

PBS P 3440.5

August 24, 1981

| Div.      | Item Description                                   | Uniformat<br>Element<br>Assignment |
|-----------|--|------------------------------------|
| <b>1.</b> | <b>General Requirements (Total)</b>                |                                    |
|           | a. Mobilization Expenses                           | (1001)                             |
|           | b. Job Site Overhead                               | (1002)                             |
|           | c. Demobilization                                  | (1003)                             |
|           | d. Main Office Expense & Profit                    | (1004)                             |
|           | e. Site Contractor Overhead & Profit               | (12A)                              |
| <b>2.</b> | <b>Site Work (Total)</b>                           |                                    |
|           | a. Clearing & Demolition                           | (121)                              |
|           | b. Grading & Earthwork (site)                      | (121)                              |
|           | c. Excavation & Backfill (foundations)             | (011)                              |
|           | d. Excavation & Backfill (basement)                | (022)                              |
|           | e. Fill Below Grade Slab                           | (021)                              |
|           | f. Pile Foundation & Caissons                      | (012)                              |
|           | g. Shoring   | (022)                              |
|           | h. Underpinning & Dewatering                       | (012)                              |
|           | i. Site Drainage & Utilities                       | (123)                              |
|           | j. Foundation & Underslab Drainage                 | (021)                              |
|           | k. Paving, Landscaping & Site Improvements         | (122)                              |
|           | l. Off-Site Work (Railroad, Marine Work & Tunnels) | (124)                              |
|           | m. Other   |                                    |
| <b>3.</b> | <b>Concrete (Total)</b>                            |                                    |
|           | a. Conc. Forms & Reinf (Foundations)               | (011)                              |
|           | b. Conc. Forms & Reinf (Slab on Grade)             | (021)                              |
|           | c. Conc. Forms & Reinf (Basement Walls)            | (023)                              |
|           | d. Conc. Forms & Reinf (Floor & Supporting Frame)  | (031)                              |
|           | e. Conc. Forms & Reinf (Roof & Supporting Frame)   | (032)                              |
|           | f. Conc. Forms & Reinf (Exterior Walls)            | (041)                              |
|           | g. Conc. Forms & Reinf (Int. Walls, Non-Load Brg.) | (061)                              |
|           | h. Conc. Forms & Reinf (Site Work)                 | (123)                              |
|           | i. Concrete Finishes (Exterior Walls)              | (041)                              |
|           | j. Concrete Finishes (Interiors)                   | (062)                              |
|           | k. Concrete Finishes (Site Work)                   | (122)                              |
|           | l. Precast Concrete (Exterior Wall Panels)         | (041)                              |
|           | m. Precast Concrete (Floor & Supporting Frame)     | (031)                              |
|           | n. Precast Concrete (Roof & Supporting Frame)      | (032)                              |
|           | o. Precast Concrete (Site Work Components)         | (122)                              |
|           | p. Other   |                                    |

Appendix 5-A

August 24, 1981

PBS P 3440.5

| Div.      | Item Description                                       | Uniformat<br>Element<br>Assignment |
|-----------|--|------------------------------------|
| <b>4.</b> | <b>Masonry (Total)</b>                                 |                                    |
|           | a. Masonry Foundations                                 | (011)                              |
|           | b. Masonry Basement Walls                              | (023)                              |
|           | c. Masonry Exterior Walls                              | (041)                              |
|           | d. Masonry Interior Walls (Floor Supporting)           | (031)                              |
|           | e. Masonry Interior Walls (Roof Supporting)            | (032)                              |
|           | f. Masonry Interior Partitions (Non-Load Bearing)      | (061)                              |
|           | g. Interior Paving & Finish                            | (062)                              |
|           | h. Exterior Paving & Masonry (Site Work)               | (122)                              |
|           | i. Other   |                                    |
| <b>5.</b> | <b>Metals (Total)</b>                                  |                                    |
|           | a. Structural Steel in Foundations                     | (012)                              |
|           | b. Structural Steel Framing (Floor Supporting)         | (031)                              |
|           | c. Structural Steel Framing (Roof Supporting)          | (032)                              |
|           | d. Metal Joists & Decking (Floor Construction)         | (031)                              |
|           | e. Metal Joists & Decking (Roof Construction)          | (032)                              |
|           | f. Metal Stairs  | (033)                              |
|           | g. Misc. & Ornamental Metal (Building Exterior)        | (041)                              |
|           | h. Misc. & Ornamental Metal (Building Interior)        | (062)                              |
|           | i. Misc. & Ornamental Metal (Site Work)                | (122)                              |
|           | j. Other   |                                    |
| <b>6.</b> | <b>Wood &amp; Plastics (Total)</b>                     |                                    |
|           | a. Rough Carpentry (Framing & Decking -- Floors)       | (031)                              |
|           | b. Rough Carpentry (Framing & Decking -- Roof)         | (032)                              |
|           | c. Rough Carpentry (Exterior Wall)                     | (041)                              |
|           | d. Rough Carpentry (Partitions, Non-Load Bearing)      | (061)                              |
|           | e. Rough Carpentry (Roof Other Than Framing & Decking) | (05)                               |
|           | f. Heavy Timber & Prefab Wood (Floor Supporting)       | (031)                              |
|           | g. Heavy Timber & Prefab Wood (Roof Supporting)        | (032)                              |
|           | h. Exterior Wood Siding & Trim                         | (041)                              |
|           | i. Fin Carpentry Millwork & Cabinet Work               | (063)                              |
|           | j. Wood Paneling                                       | (062)                              |
|           | k. Wood Stairs   | (033)                              |
|           | l. Plastic Fabrications                                | (063)                              |
|           | m. Other   |                                    |

## Appendix 5-A

PBS P 3440.5

August 24, 1981

| Div.      | Item Description                                 | Uniformat<br>Element<br>Assignment |
|-----------|--|------------------------------------|
| <b>7.</b> | <b>Thermal &amp; Moisture Protection (Total)</b> |                                    |
|           | a. Water & Dampproofing (Slab on Grade)          | (021)                              |
|           | b. Water & Dampproofing (Basement Walls)         | (023)                              |
|           | c. Water & Dampproofing (Exterior Walls)         | (041)                              |
|           | d. Thermal Insulation (Foundation & Slab)        | (021)                              |
|           | e. Thermal Insulation (Exterior Walls)           | (041)                              |
|           | f. Thermal Insulation (Roof)                     | ( 05)                              |
|           | g. Roofing Shingles & Tiles                      | ( 05)                              |
|           | h. Shingles on Exterior Walls                    | (041)                              |
|           | i. Preformed Siding & Panels                     | (041)                              |
|           | j. Preformed Roofing                             | ( 05)                              |
|           | k. Membrane Roofing, Traffing Topping            | ( 05)                              |
|           | l. Sheet Metal & Roof Accessories                | ( 05)                              |
|           | m. Skylights                                     | ( 05)                              |
|           | n. Sealants & Calking                            | (041)                              |
|           | o. Other   |                                    |
| <b>8.</b> | <b>Doors &amp; Windows (Total)</b>               |                                    |
|           | a. Exterior Doors & Frames                       | (042)                              |
|           | b. Exterior Windows & Curtain Walls              | (042)                              |
|           | c. Interior Doors & Frames                       | (061)                              |
|           | d. Exterior Glass & Glazing                      | (042)                              |
|           | e. Interior Glass & Glazing                      | (061)                              |
|           | f. Hardware & Specialties (Exterior)             | (042)                              |
|           | g. Hardware & Specialties (Exterior)             | (061)                              |
|           | h. Other   |                                    |
| <b>9.</b> | <b>Finishes (Total)</b>                          |                                    |
|           | a. Lath & Plaster (Exterior)                     | (041)                              |
|           | b. Lath & Plaster (Interior)                     | (062)                              |
|           | c. Gypsum Wallboard                              | (062)                              |
|           | d. Tile & Terrazzo                               | (062)                              |
|           | e. Acoustical Ceilings & Treatment               | (062)                              |
|           | f. Wood Flooring                                 | (062)                              |
|           | g. Resilient Flooring                            | (062)                              |
|           | h. Carpeting                                     | (062)                              |
|           | i. Exterior Coatings                             | (041)                              |
|           | j. Interior Special Flooring & Coatings          | (062)                              |
|           | k. Interior Painting & Wall Covering             | (062)                              |
|           | l. Other   |                                    |

Appendix 5-A



August 24, 1981

PBS P 3440.5

| Div. | Item Description                      | Uniformat<br>Element<br>Assignment |
|------|---------------------------------------|------------------------------------|
| 10.  | Specialties (Total)                   |                                    |
|      | a. Chalkboards & Tackboards           | (063)                              |
|      | b. Compartments & Cubicles            | (061)                              |
|      | c. Signs & Supergraphics              | (063)                              |
|      | d. Movable & Demountable Partitions   | (061)                              |
|      | e. Lockers                            | (063)                              |
|      | f. Toilet, Bath, Wardrobe Accessories | (063)                              |
|      | g. Sun Control Devices                | (041)                              |
|      | h. Access Flooring                    | (062)                              |
|      | i. Miscellaneous Specialties          | (063)                              |
|      | j. Flagpoles                          | (122)                              |
|      | k. Other                              |                                    |
| 11.  | Equipment (Specify)                   | (111)                              |
|      |                                       |                                    |
|      |                                       |                                    |
|      |                                       |                                    |
| 12.  | Furnishings (Specify)                 | (112)                              |
|      |                                       |                                    |
|      |                                       |                                    |
|      |                                       |                                    |
| 13.  | Special Construction (Specify)        | (113)                              |
|      |                                       |                                    |
|      |                                       |                                    |
|      |                                       |                                    |
| 14.  | Conveying Systems                     |                                    |
|      | a. Elevators, Dumbwaiters & Lifts     | ( 07)                              |
|      | b. Moving Stairs & Walks              | ( 07)                              |
|      | c. Conveyors, Hoists, Etc.            | ( 07)                              |
|      | d. Pneumatic Tube Systems             | ( 07)                              |
|      | e. Other                              |                                    |

August 24, 1981

PBS P 3440.5

| Div.       | Item Description                            | Uniformat<br>Element<br>Assignment |
|------------|---|------------------------------------|
| <b>15.</b> | <b>Mechanical</b>                           |                                    |
|            | a. Exterior Mechanical (to 5 ft. of bldg)   | (123)                              |
|            | b. Water Supply & Treatment                 | (081)                              |
|            | c. Waste Water Disposal & Treatment         | (081)                              |
|            | d. Plumbing Fixtures                        | (081)                              |
|            | e. Fire Protection Systems & Equipment      | (083)                              |
|            | f. Heat Generation Equipment                | (082)                              |
|            | g. Refrigeration                            | (082)                              |
|            | h. HVAC Piping, Ductwork & Terminal Units   | (082)                              |
|            | i. Controls & Instrumentation               | (082)                              |
|            | j. Insulation (plumbing)                    | (081)                              |
|            | k. Insulation (HVAC)                        | (082)                              |
|            | l. Special Mechanical Systems               | (084)                              |
|            | m. Other                                    |                                    |
| <b>16.</b> | <b>Electrical</b>                           |                                    |
|            | a. Utilities & Serv. Ent. to 5 ft. of Bldg. | (123)                              |
|            | b. Substations & Transformers               | (091)                              |
|            | c. Distribution & Panel Boards              | (091)                              |
|            | d. Lighting Fixtures                        | (092)                              |
|            | e. Branch Wiring & Devices                  | (092)                              |
|            | f. Special Electrical Systems               | (093)                              |
|            | g. Communications                           | (093)                              |
|            | h. Electric Heating                         | (093)                              |



August 24, 1981

PBS P 3440.5

TABLE OF CONTENTS

CHAPTER 6. POST AWARD CONSTRUCTION COST ANALYSIS

| <u>Paragraph<br/>Titles</u>                  | <u>Paragraph<br/>Numbers</u> |
|--|------------------------------|
| Scope . . . . .                              | 1                            |
| Government furnished data . . . . .          | 2                            |
| Construction contract bid analysis . . . . . | 3                            |
| Revision of UNIFORMAT estimate . . . . .     | 4                            |
| Historical data submittal . . . . .          | 5                            |
| Change order estimating . . . . .            | 6                            |

Figure 6-5. Cost data

August 24, 1981

PBS P 3440.5

#### CHAPTER 6. POST AWARD CONSTRUCTION COST ANALYSIS

1. Scope. This chapter describes the analysis to be performed and estimating products to be prepared after construction contract award.

2. Government furnished data. To perform the work required in this chapter, the Government will provide the following data:

a. The abstract of bids received for the procurement with an indication of the award amount and the offered bids by all contractors.

b. Any breakdown or verification of contractor or subcontractor prices obtained by the Government in the course of contract award.

c. The contractors approved schedule of prices to be used for progress payment purposes.

3. Construction contract bid analysis. After the construction contract is awarded, the A-E shall make an analysis of the bid cost utilizing all available cost data, including the contractor's breakdown of cost submitted as payment schedule for monthly progress payments for each trade or subcontract. The purpose of this analysis is to develop historical cost data for future project planning and budget estimating.

4. Revision of UNIFORMAT estimate. The A-E shall review the final cost estimate and make revisions so that it will conform with actual contract cost, to the extent possible. The total cost should agree with actual bid cost and each major element (level 3) should be adjusted (if necessary) based on the above bid analysis. It is recognized that actual bid cost data will not be available to revise the UNIFORMAT cost breakdown with 100 percent accuracy. The adjusted cost data shall be provided to GSA on completed GSA Forms 3474 and 3473.

5. Historical data submittal. After completion of the above cost analysis work, the A-E shall complete GSA Form 3472, GSA Cost Data, to provide a synopsis of the project space plan, efficiency, scope, and basic design parameter measures for association with their cost. Fig. 6-5 illustrates this form.

6. Change order estimating. This will be the subject of a future separate issuance on cost and pricing. However, when such estimates are required for change order documents prepared by the A-E, the estimate for the changed work shall be at UNIFORMAT level 6 and shall be a separate labor and material breakdown.

PBS P 3440.5

August 24, 1981

| Building Type:               |         |            |            | <b>Cost Data</b>   |      |
|------------------------------|---------|------------|------------|--------------------|------|
| Project:                     |         |            |            | Location:          |      |
| A-E:                         |         |            |            | Bid date:          |      |
| General Contractor:          |         |            |            | Market conditions: |      |
| Description of building:     |         |            |            | Award amount:      |      |
|                              |         |            |            |                    |      |
| Sketch:                      |         |            |            |                    |      |
|                              |         |            |            |                    |      |
| <b>Floor area (by level)</b> |         |            |            |                    |      |
| Level                        | No.     | Gross Area |            | GSF                | %    |
| Basements                    |         |            |            | GSF                |      |
| Ground floor                 |         |            |            | GSF                |      |
| Upper floors                 |         |            |            | GSF                |      |
| Penthouse                    |         |            |            | GSF                |      |
| Totals                       |         |            |            | GSF                | 100% |
| <b>Floor area (by type)</b>  |         |            |            |                    |      |
|                              |         |            | occupiable | SF                 | %    |
|                              |         |            |            | SF                 |      |
|                              |         |            |            | SF                 |      |
|                              |         |            |            | SF                 |      |
|                              |         |            |            | SF                 |      |
| Total occupiable area        |         |            |            | SF                 | %    |
| Circulation                  |         |            |            |                    |      |
| Mech. & Elec. Equip. spare   | SF      |            |            |                    |      |
| Toilets                      | SF      |            |            |                    |      |
| Walls, partitions, etc.      | SF      |            |            |                    |      |
| Custodial                    | SF      |            |            |                    |      |
| Total support area           |         |            |            | SF                 | %    |
| <b>Configuration data</b>    |         |            |            |                    |      |
| Below grade                  |         |            |            |                    |      |
| depth                        |         |            |            | FT                 |      |
| volume                       |         |            |            | CF                 |      |
| Above grade                  |         |            |            |                    |      |
| height                       |         |            |            | FT                 |      |
| volume                       |         |            |            | CF                 |      |
| Exterior closure area        |         |            |            | SF                 |      |
| Average perimeter            |         |            |            | LF                 |      |
| Length to width ratio        |         |            |            |                    |      |
| No. of occupants - permanent |         |            |            | EA                 |      |
| visitor                      |         |            |            | EA                 |      |
| <b>Design Data</b>           |         |            |            |                    |      |
| 01 FOUNDATIONS               |         |            |            |                    |      |
| Soil bearing capacity        |         |            |            | KIPS/SF            |      |
| Total design load            |         |            |            | KIPS               |      |
| 02 SUBSTRUCTURE              |         |            |            |                    |      |
| Footprint area               |         |            |            | SF                 |      |
| 03 SUPERSTRUCTURE            |         |            |            |                    |      |
| Bay size                     |         |            |            |                    |      |
| Loads:                       | live    |            |            | KIPS               |      |
|                              | dead    |            |            | KIPS               |      |
|                              | wind    |            |            | KIPS               |      |
|                              | seismic |            |            | KIPS               |      |
| Stairs                       |         |            |            | FLIGHTS            |      |
| 04 EXTERIOR CLOSURE          |         |            |            |                    |      |
| Fenestration                 |         |            |            | %                  |      |
| 05 ROOFING                   |         |            |            |                    |      |
| Openings/skylites            |         |            |            | %                  |      |
| 06 INTERIOR CONSTRUCTION     |         |            |            |                    |      |
| Perm. partitions             |         |            |            | LF                 |      |
| Demount. partit.             |         |            |            | LF                 |      |
| Spec. floors                 |         |            |            | SF                 |      |
| Spec. ceilings               |         |            |            | SF                 |      |
| Spec. finishes               |         |            |            | SF                 |      |
| 07 CONVEYING SYSTEMS         |         |            |            |                    |      |
| Freight elev.                |         |            |            | EA                 |      |
| Passenger elev.              |         |            |            | EA                 |      |
| Escalators                   |         |            |            | LF                 |      |
| 08 MECHANICAL                |         |            |            |                    |      |
| Heating                      |         |            |            | MBTUH              |      |
| Cooling                      |         |            |            | TONS               |      |
| Ventilation                  |         |            |            | CFM                |      |
| Control                      |         |            |            | ZONES              |      |
| Roof/floor drains            |         |            |            | EA                 |      |
| Plumbing fixtures            |         |            |            | EA                 |      |
| Sprinkler system             |         |            |            | HEADS              |      |
| Standpipe system             |         |            |            | LF                 |      |
| 09 ELECTRICAL                |         |            |            |                    |      |
| Light/power                  |         |            |            | WATTS/SF           |      |
| Transformer cap.             |         |            |            | KVA                |      |
| Motors                       |         |            |            | HP                 |      |
| 10 GENERAL CONDITIONS        |         |            |            |                    |      |
| No. bidders                  |         |            |            | EA                 |      |
| 11 EQUIPMENT                 |         |            |            |                    |      |
| -----                        |         |            |            |                    |      |
| -----                        |         |            |            |                    |      |
| -----                        |         |            |            |                    |      |
| -----                        |         |            |            |                    |      |
| 12 SITEWORK                  |         |            |            |                    |      |
| Site size                    |         |            |            | ACRES              |      |
| Avg. utility run             |         |            |            | LF                 |      |
| Landscaped area              |         |            |            | SF                 |      |
| Ext. parking                 |         |            |            | CARS               |      |
| Other paved areas            |         |            |            | SF                 |      |

GSA FORM 3472 (2-81)

Figure 6-5. Cost data  
(Part 1 of 2)

August 24, 1981

PBS P 3440.5

| ELEMENTAL CATEGORY                 | MATERIAL QUALITY<br>OR SYSTEM TYPE | SYSTEM<br>COST | PARAMETER<br>QUANTITY | UNIT<br>MEAS. | UNIT<br>COST | %<br>COST |
|------------------------------------|------------------------------------|----------------|-----------------------|---------------|--------------|-----------|
| 01 FOUNDATIONS                     |                                    |                |                       |               |              |           |
| 011 Standard Foundations           |                                    |                |                       |               |              |           |
| 012 Special foundations conditions |                                    |                |                       |               |              |           |
| 02 SUBSTRUCTURE                    |                                    |                |                       |               |              |           |
| 021 Slab on grade                  |                                    |                |                       |               |              |           |
| 022 Basement excavation            |                                    |                |                       |               |              |           |
| 023 Basement walls                 |                                    |                |                       |               |              |           |
| 03 SUPERSTRUCTURE                  |                                    |                |                       |               |              |           |
| 031 Floor construction             |                                    |                |                       |               |              |           |
| 032 Roof construction              |                                    |                |                       |               |              |           |
| 033 Stair construction             |                                    |                |                       |               |              |           |
| 04 EXTERIOR CLOSURE                |                                    |                |                       |               |              |           |
| 041 Exterior walls                 |                                    |                |                       |               |              |           |
| 042 Fenestration                   |                                    |                |                       |               |              |           |
| 05 ROOFING                         |                                    |                |                       |               |              |           |
| 051 Roof system                    |                                    |                |                       |               |              |           |
| 052 Opening/Skylights              |                                    |                |                       |               |              |           |
| 06 INTERIOR CONSTRUCTION           |                                    |                |                       |               |              |           |
| 061 Partitions                     |                                    |                |                       |               |              |           |
| 062 Interior finishes              |                                    |                |                       |               |              |           |
| 063 Specialties                    |                                    |                |                       |               |              |           |
| 07 CONVEYING SYSTEMS               |                                    |                |                       |               |              |           |
| 071 Elevators                      |                                    |                |                       |               |              |           |
| 072 Escalators                     |                                    |                |                       |               |              |           |
| 08 MECHANICAL                      |                                    |                |                       |               |              |           |
| 081 Plumbing                       |                                    |                |                       |               |              |           |
| 082 HVAC                           |                                    |                |                       |               |              |           |
| 083 Fire protection                |                                    |                |                       |               |              |           |
| 084 Special mechanical systems     |                                    |                |                       |               |              |           |
| 09 ELECTRICAL                      |                                    |                |                       |               |              |           |
| 091 Service and distribution       |                                    |                |                       |               |              |           |
| 092 Lighting and power             |                                    |                |                       |               |              |           |
| 093 Special electrical systems     |                                    |                |                       |               |              |           |
| 10 GENERAL CONDITIONS AND PROFIT   |                                    |                |                       |               |              |           |
|                                    | NET BUILDING COST                  |                |                       |               |              |           |
| 11 EQUIPMENT                       |                                    |                |                       |               |              |           |
| 111 Fixed and movable equipment    |                                    |                |                       |               |              |           |
| 112 Furnishings                    |                                    |                |                       |               |              |           |
| 113 Special construction           |                                    |                |                       |               |              |           |
|                                    | GROSS BUILDING COST                |                |                       | GSF           |              | 100%      |
| 12 SITE WORK                       |                                    |                |                       |               |              |           |
| 121 Site preparation               |                                    |                |                       |               |              |           |
| 122 Site improvements              |                                    |                |                       |               |              |           |
| 123 Site utilities                 |                                    |                |                       |               |              |           |
| 124 Off-site work                  |                                    |                |                       |               |              |           |
|                                    | CONSTRUCTION COST                  |                |                       |               |              |           |
| REMARKS                            |                                    |                |                       |               |              |           |

GSA FORM 3472 BACK (2-81)

Figure 6-5. Cost data  
(Part 2 of 2)

3 and 4